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# Predicting Workplace Delinquency and Integrity with the HEXACO and Five-Factor Models of Personality Structure

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Recent lexical studies of personality structure suggest that there are 6, not just 5, basic dimensions of human personality variation. The most distinguishing feature of this new 6-dimensional structure, known as the HEXACO model, is the addition of a new factor named Honesty–Humility. We demonstrate that this new dimension has important implications in personnel psychology. Specifically, the HEXACO model substantially outperformed the Five-factor model (FFM) in predicting workplace delinquency based on samples obtained in 3 different countries, namely, Australia, Canada, and the Netherlands. In addition, the HEXACO model substantially outperformed the FFM in predicting scores on an overt integrity test, due to the inclusion of the Honesty–Humility dimension.

The Five-factor model (FFM) of personality structure has had a profound impact on the Industrial and Organizational (I/O) psychological literature. Comprehen-

sive meta-analyses adopting the variables of the FFM—Extraversion, Agreeableness, Conscientiousness, Neuroticism (vs. Emotional Stability), and Openness to Experience (or Intellect/Imagination)—have been conducted with respect to important variables in I/O psychology such as job performance (Barrick & Mount, 1991), leadership (Judge, Bono, Ilies, & Gerhardt, 2002), and counterproductive behaviors (Salgado, 2002). Indeed, the absence of a widely accepted model of personality structure had until recently been one of the major barriers to the systematic accumulation of knowledge involving personality. Therefore, recent advances in our knowledge about the relationships between personality and work variables are owed in great deal to the discovery of the FFM dimensions, also known as the “Big Five” personality factors.<sup>1</sup>

However, some researchers have questioned the comprehensiveness of the FFM and have made suggestions of alternative factor structures. For instance, R. Hogan (1986; R. Hogan & Hogan, 1995) and Hough, Eaton, Dunnette, Kamp, and McCloy (1990) proposed six- and nine-factor models, respectively, on the basis of these models’ superior predictive validity in comparison with the FFM for some important criteria. Recently, Ashton and Lee (2001) have rekindled the debate regarding the comprehensiveness of the FFM (see also Ashton, Lee, Perugini, et al., 2004; Ashton, Lee, & Son, 2000; Lee & Ashton, 2004), proposing that the optimal taxonomy of personality traits consists of six rather than five major dimensions. This proposal differs from those described previously in that it is based on findings of lexical studies of personality structure, from which the FFM was originally derived. Specifically, according to Ashton, Lee, Perugini, et al.’s review (2004), lexical studies of personality structure conducted in diverse languages have repeatedly found six, not just five, major dimensions of personality variation.<sup>2</sup>

The purpose of this article is to review this recent evidence from lexical studies and thereby to introduce this new model of personality structure to personnel researchers. The second purpose of this article is to address implications of this new structural model for the field of personnel psychology. Specifically, we demonstrate that this six-dimensional model of personality can predict some important variables in I/O psychology more effectively than the FFM can predict those variables.

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<sup>1</sup>We use the terms FFM and Big Five interchangeably here, although some minor differences do exist between the two structures; see Goldberg (1993).

<sup>2</sup>Tellegen and his colleagues (see Tellegen, 1993) argued for a seven-factor model of personality based on findings from their nontraditional lexical studies, which included adjectives that are almost purely evaluative, containing almost no descriptive content (e.g., *wonderful*, *excellent*, *good-for-nothing*, *awful*). However, because these terms do not describe personality characteristics, their inclusion is therefore inconsistent with the logic of the lexical approach to personality structure. For a detailed explanation of this important point, see Ashton and Lee (2001, 2002).

## A ROBUST SIX-FACTOR STRUCTURE OF PERSONALITY

Because our proposal calling for the revision of the FFM was prompted by recent findings in lexical studies of personality structure, it is important to understand the logic behind these investigations. The lexical approach was developed as a means of finding the answer to the most difficult problem plaguing this area, namely, how to obtain variable sets that are representative of the universe of personality characteristics, so that factor analyses of these variable sets can provide a close approximation to the true structure of personality variation. The lexical approach to personality structure posits that important human personality traits are encoded in every natural language (i.e., the lexical hypothesis; see, e.g., Goldberg, 1993; see also Block, 1995, for a critique). In other words, the contemporary personality lexicon of any given language constitutes a collection of words that have been generated and retained across many preceding generations to express the full array of noteworthy personality characteristics. It therefore follows that one can recover the basic dimensions of human personality variation by factor analyzing ratings on a comprehensive set of personality-descriptive adjectives.

Investigations based on the lexical approach represent the line of research from which the Big Five factors were originally found and from which the FFM was derived (see McCrae, 1989). Specifically, when self- or peer ratings on a set of personality-descriptive terms in the English language were factor analyzed, five roughly independent factors known as the Big Five have frequently been observed (see Goldberg, 1993, for a review). However, findings obtained from more recent lexical studies, characterized by the investigation of additional languages and comprehensive sets of trait terms, suggest a somewhat different result.

Since the late 1980s, standard lexical studies of personality structure—based on analyses of personality-descriptive adjectives only—have been extended to many other languages, and a recent review of these standard lexical studies of personality structure showed that there are six, not just five, factors that have been observed across several languages. According to this review, a very similar set of six factors was recovered in eight independent standard lexical studies involving seven different languages, including Dutch, French, German, Hungarian, Italian, Korean, and Polish (see Ashton, Lee, Perugini, et al., 2004). Moreover, Ashton, Lee, and Goldberg (2004) recently revisited the six-factor solution of the English personality lexicon structure using a variable set representing nearly the entire population of the English personality descriptors—a set of 1,710 adjectives. Interestingly, they found six factors that were similar to those found in other languages and concluded that there is little inconsistency between the structure of the English personality lexicon and those of the other languages listed previously. Including this recent English lexical study, a similar set of six factors has been observed in eight of the nine languages in which standard lexical studies of personality structure have

been conducted.<sup>3</sup> Given that research based on the lexical approach provided the origin of the FFM, these results argue for the replacement of the FFM by the new six-factor structure.

The new sixth factor discovered in the previously mentioned studies is consistently defined by such content as sincerity, fairness, lack of conceit, and lack of greed. Therefore, we have named this factor Honesty–Humility (see reviews by Ashton & Lee, 2001, 2002; Ashton, Lee, Perugini, et al., 2004; Ashton et al., 2000; Lee & Ashton, 2004). Ashton et al. (2000) suggested that this factor represents individual differences in a reluctance versus a willingness to exploit others, a tendency that is not adequately captured by any of the Big Five factors. Lee and Ashton developed a new personality inventory to measure the six factors as obtained in lexical studies of personality structure in several languages. This new six-dimensional framework is called the HEXACO model—an acronym of Honesty–Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to Experience. One additional modification that was made in this model is that Agreeableness and Emotionality have been reconceptualized as rotational variants of the two corresponding Big Five factors, a modification that is also consistent with the results of lexical studies reviewed previously (see Ashton, Lee, Perugini, et al., 2004; Ashton, Lee, & Goldberg, 2004, for details).

## THE HEXACO MODEL VERSUS FFM IN PREDICTING WORKPLACE BEHAVIOR

The Honesty–Humility factor in the HEXACO model introduces a new dimension that is not adequately captured by the FFM but that is likely to be useful in predicting some important workplace variables. In the remainder of this article, we examine the value of the sixth dimension for improving our prediction of two variables that are of particular importance in the field of I/O psychology: workplace delinquency and the overt integrity test. We selected these two variables for the following reasons. First, both are obviously among the most frequently studied variables in I/O psychology, yet the FFM does not appear to accommodate these variables satisfactorily (discussed later). Second, both variables have a clear conceptual link to Honesty–Humility. Workplace delinquency scales and overt integrity tests both consist of admissions of wrongdoings such as theft, fraud, sabotage, and alcohol or drug use. Moreover, overt integrity test content additionally includes attitudes toward those wrongdoings and the perpetrators of such acts (Alliger, Lilienfeld, & Mitchell, 1996).

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<sup>3</sup>The results of the ninth language, Czech (Hrebickova, 1995), are somewhat ambiguous as a result of the inclusion of motor skill–related terms among the personality-descriptive adjectives, which loaded on the sixth factor of the Czech six-factor solution.

There already exist some studies suggesting that the FFM has a limited ability to predict these variables. Recently, Salgado (2002) presented meta-analytic findings involving the Big Five and deviant behaviors, which include theft, disciplinary problems, substance abuse, property damage, rule breaking, and other irresponsible behaviors. He found that, among the Big Five factors, Conscientiousness was most strongly correlated with deviant behavior criteria (corrected  $r = .26$ , observed  $r = .16$ ) followed by Agreeableness (corrected  $r = .20$ , observed  $r = .13$ ). It is important to note that the degree to which Conscientiousness and Agreeableness correlated with workplace delinquency was modest. As with workplace delinquency, overt integrity tests appear to be accommodated rather poorly by the FFM. Sackett and Wanek (1996, Table 3) reported that the strongest meta-analytic correlation was found with Conscientiousness  $r = .39$ , observed  $r = .26$ , followed by Agreeableness  $r = .34$ , observed  $r = .23$  and Emotional Stability  $r = .28$ , observed  $r = .18$ ). Given these levels of correlations of the FFM variables with overt integrity tests, it is clear that the remarkably strong validity coefficients that overt integrity tests show with respect to supervisor ratings of job performance (see Ones, Viswesvaran, & Schmidt, 1993) cannot be explained by any combination of the FFM variables (see also Murphy & Lee, 1994a).

The limited ability of the FFM to accommodate variances of workplace delinquency and overt integrity test variables is, we believe, due to the absence of a personality factor within the FFM that directly taps individual differences in exploitation and deception (Ashton et al., 2000; Paulhus & Williams, 2002), which are likely to be core characteristics of those who engage in workplace delinquency (Lee, Ashton, & Shin, 2005). In contrast, a sixth factor tapping such personality traits does exist in the HEXACO model. Ashton et al. (2000) showed that lexical Honesty–Humility was strongly negatively correlated with some existing personality constructs tapping manipulation and exploitation, such as Machiavellianism (Christie & Geis, 1970), primary psychopathy (Harpur, Hare, & Hakstian, 1989; Levenson, Kiehl, & Fitzpatrick, 1995), and social adroitness (Jackson, 1994). None of the lexical Big Five factors, however, correlated significantly with these variables. Given these findings, it is likely that the two workplace variables described previously can be better delineated by the HEXACO model, which includes Honesty–Humility, than by the FFM.

## Summary

Before leaving this section, we should summarize our points as follows. First, the FFM was derived from lexical studies of personality structure conducted in the English language (see, e.g., Goldberg, 1993; McCrae, 1989). Surprisingly, however, subsequent lexical studies of personality structure, across a diverse variety of languages including English, have repeatedly revealed a similar set of six dimensions (Ashton, Lee, & Goldberg, 2004; Ashton, Lee, Perugini, et al., 2004). Based

on the same methodology as has been used in uncovering the Big Five, these findings suggest that the six-dimensional model can offer a more optimal representation of the structure of personality traits. Second, the omission of the sixth factor from the FFM is likely to undermine the utility of that model in predicting some important variables in I/O psychology. This hypothesis is tested using two frequently investigated criteria in I/O psychology: workplace deviance and overt integrity test scores.

## METHOD

### Participants

For the examination involving workplace delinquency, participants were university students who had some employment history. The participants were recruited from three different countries: Australia, Canada, and the Netherlands. A total of 106 Australian participants (45.3% women, mean age = 26.4 years,  $SD = 10.2$ ), 179 Canadian participants (Canadian Sample A, 55.9% women, mean age = 20.7 years,  $SD = 3.5$ ), and 128 Dutch participants were recruited (64.1% women, mean age = 21.0 years,  $SD = 2.1$ ).

For the investigation involving integrity tests, 164 Canadian university students (Canadian Sample B, 56.1% women, mean age = 23.9 years,  $SD = 7.3$ ) were recruited as participants. As in other studies (Alliger et al., 1996; Murphy & Lee, 1994b), university students without employment history were eligible to participate in this survey, because completing the overt integrity test does not require respondents to have previous work experience.

### Measures

Responses were made for all the personality items using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). All measures used in the Netherlands were carefully translated by the third author and translated back into English by a graduate student of English who works as a professional translator. The back-translated items did not reveal any significant changes in meanings from the original items.

*The HEXACO Personality Inventory (HEXACO-PI).* Lee and Ashton (2004) recently developed a new measure of the major personality dimensions, which is designed to operationalize the six lexical factors widely replicated in multiple languages (see Ashton, Lee, Perugini, et al., 2004). The psychometric properties of the full-length HEXACO-PI are reported in detail in Lee and Ashton (2004). For the workplace delinquency investigation, the 108-item version of the

HEXACO-PI was used (18 items per dimension). For the integrity test investigation, a shorter, 60-item version (10 items per dimension) was used. The convergent correlations of factors across these two versions were previously found to be very strong, all exceeding .90.

*Measures of the FFM dimensions.* We chose to use several different operationalizations of the FFM to demonstrate that our findings are not confined to a particular instrument. Altogether, three different measures were used to operationalize the dimensions of the FFM. In the Australian and Dutch samples, we used Goldberg's (1999) 50-item International Personality Item Pool Big Five scales. These scales were constructed to measure the five factors that were found in the early English-language lexical studies (i.e., the classic Big Five factors). In the Canadian Sample A (the delinquency study sample), we used the scales of the 60-item NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992), which is among the most widely used brief inventories representing the FFM. Finally, in the Canadian Sample B (the integrity study sample), we used the 44-item Big Five Inventory (BFI) developed by John, Donahue, and Kentle (1991). Evidence for the reliability and validity of the BFI is well established (see John & Srivastava, 1999). Reliabilities of the scales are shown in Table 1.

*Workplace delinquency.* In addition to the personality scales, above, we also administered the Workplace Behavior Questionnaire (see Ashton, 1998, pp. 302–303) to the Australian, Dutch, and Canadian A samples, which was used as a self-report measure of delinquent behavior in the workplace. This scale has eight scored items that ask for estimates from the respondent of his or her past delinquent behaviors in the workplace, such as theft (dollar amount stolen), vandalism, absenteeism, and alcohol use or influence (percentage of shifts). To use the Workplace Behavior Questionnaire in the Netherlands, some items were modified to be applicable in the Dutch context (e.g., by changing dollars to euros).

Although the Workplace Behavior Questionnaire has not been directly validated against a criterion of directly observed behavior, its construct validity is supported by its very strong overlap with a variable that has been found to predict observed theft. Nicol and Paunonen (2002a) found the Workplace Behavior Questionnaire to correlate .67 with the Major Admissions scale of the Phase II Profile (Lousig-Nont, 1989), a correlation that rises to .86 if disattenuated for unreliability in the two variables. In a separate report, Nicol and Paunonen (2002b) found the Major Admissions scale to correlate .32 with a *single-occasion* measure of observed stealing in a laboratory setting. Given the very strong empirical and conceptual relation between the Workplace Behavior Questionnaire and the Major Admissions scale of the Phase II Profile, it is very likely that the former scale would be comparable to the latter in predicting directly observed behavior criteria related to theft.



TABLE 1  
Means, Standard Deviations, Internal-Consistency Reliabilities, and Intercorrelations of the Variables

	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>
Australian sample <sup>a</sup>														
Honesty–Humility	3.41	.51	.79											
Emotionality	3.22	.53	.16	.83										
Extraversion	3.25	.50	.00	.14	.81									
Agreeableness	2.99	.55	.26	–.12	.11	.84								
Conscientiousness	3.31	.53	.38	.16	.01	.12	.82							
Openness to Experience	3.22	.62	.25	.03	.27	.02	.28	.87						
IPIP extraversion	3.23	.66	–.17	.20	.76	–.01	–.04	.31	.87					
IPIP agreeableness	3.77	.50	.27	.48	.47	.11	.22	.34	.41	.81				
IPIP conscientiousness	3.43	.50	.37	.02	.00	.15	.71	.06	–.12	.18	.75			
IPIP emotional stability	3.18	.67	.04	–.58	.08	.53	.05	.12	.01	–.13	.22	.87		
IPIP intellect	3.57	.57	.06	–.12	.33	.02	.17	.61	.39	.34	.00	.21	.83	
Work delinquency	2.08	.99	–.51	–.29	.10	–.24	–.16	–.06	.09	–.29	–.27	–.04	.12	.83
Canadian sample A <sup>b</sup>														
Honesty–Humility	3.38	.62	.86											
Emotionality	3.27	.64	.19	.87										
Extraversion	3.35	.61	–.11	–.10	.87									
Agreeableness	3.09	.59	.38	.00	–.05	.85								
Conscientiousness	3.29	.65	.33	.19	–.07	.14	.88							
Openness to Experience	3.21	.69	.06	–.15	–.01	.00	–.02	.87						
NEO–FFI extraversion	3.51	.56	.00	–.10	.77	.11	–.04	–.14	.79					
NEO–FFI agreeableness	3.61	.61	.52	.22	.13	.61	.17	–.10	.21	.82				
NEO–FFI conscientiousness	3.61	.59	.34	.15	–.01	.17	.79	–.16	.03	.28	.83			
NEO–FFI neuroticism	2.85	.71	–.03	.53	–.39	–.18	.05	.04	–.40	–.21	–.04	.85		
NEO–FFI openness	3.41	.59	.04	–.05	.01	–.05	–.04	.80	–.18	–.06	–.17	.12	.77	
Work delinquency	2.05	.91	–.55	–.28	.15	–.25	–.38	.07	.12	–.26	–.41	–.06	–.01	.81

Dutch sample <sup>c</sup>														
Honesty–Humility	3.32	.47	.78											
Emotionality	3.28	.58	.06	.87										
Extraversion	3.49	.56	–.12	–.02	.87									
Agreeableness	3.13	.45	.17	–.06	.01	.77								
Conscientiousness	3.18	.57	.05	–.06	.01	.05	.85							
Openness to Experience	3.40	.54	.02	.02	.14	.04	.02	.83						
IPIP extraversion	3.76	.79	–.19	.01	.88	.03	.02	.06	.90					
IPIP agreeableness	4.31	.52	.12	.31	.40	.44	.18	.14	.40	.82				
IPIP conscientiousness	3.56	.66	–.05	–.07	.06	.08	.76	.07	.06	.13	.81			
IPIP emotional stability	3.57	.77	.04	–.60	.34	.27	.05	–.07	.28	.07	.07	.88		
IPIP intellect	4.06	.46	–.11	–.01	.24	–.02	.18	.55	.27	.21	.18	–.07	.64	
Work delinquency	1.74	.56	–.34	.01	.09	–.14	–.34	.18	.13	–.05	–.28	–.10	.20	.63
Canadian sample B <sup>d</sup>														
Honesty–Humility	3.29	.57	.71											
Emotionality	3.31	.61	.22	.77										
Extraversion	3.20	.64	–.07	–.01	.83									
Agreeableness	3.09	.59	.19	–.26	.00	.76								
Conscientiousness	3.42	.59	.19	.05	–.01	.06	.76							
Openness to Experience	3.53	.57	.08	–.08	.08	.02	.09	.72						
BFI extraversion	3.07	.70	–.08	–.03	.85	–.03	–.05	.06	.86					
BFI agreeableness	3.64	.52	.35	–.02	.21	.61	.19	.13	.18	.75				
BFI conscientiousness	3.52	.55	.19	–.13	.09	.14	.71	.12	.13	.28	.80			
BFI emotional stability	3.01	.71	.00	–.64	.28	.44	.06	.08	.26	.40	.30	.85		
BFI intellect/openness	3.51	.55	.01	.03	.15	.11	.07	.65	.14	.17	.12	.02	.78	
Employee Integrity Index	3.42	.38	.53	.28	–.07	.20	.25	.13	–.09	.32	.28	.02	.05	.90

*Note.* IPIP = International Personality Item Pool. NEO-FFI = NEO Five Factor Inventory. BFI = Big Five Personality Inventory. Values in diagonal are internal-consistency reliabilities.

<sup>a</sup>*N* = 106. <sup>b</sup>*N* = 179. <sup>c</sup>*N* = 128. <sup>d</sup>*N* = 164.

**Overt integrity test.** The Employee Integrity Index (EII; Ryan & Sackett, 1987) was administered to the Canadian Sample B. In this study, the 52-item theft attitudes scale and the 11-item theft admissions scale were included and these two scales were combined to form an overall overt integrity test. Responses were made on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) for the theft attitudes items; for the theft admissions items, the anchor description varies depending on the item. Ryan and Sackett noted that the EII was modeled after existing commercially available overt integrity tests. Items in the EII are similar to those included in widely used overt integrity tests, such as the Reid Report, the London House Personnel Selection Inventory (PSI), and the Stanton Survey. Information regarding the psychometric properties of the EII can be found in Ryan and Sackett (1987) and Alliger et al. (1996). We have scored the EII so that higher scores indicate higher levels of integrity (i.e., stricter attitudes toward theft and lower dollar values of admitted theft).

## RESULTS

Scale scores for each variable were calculated by finding each participant's mean response across all items within each scale, after recoding of reverse-keyed items. Table 1 shows the descriptive statistics, internal-consistency reliabilities, and intercorrelations for the measures of personality and workplace delinquency and the EII. Across the four samples recruited from the three different countries, HEXACO-PI Honesty–Humility showed the strongest correlations with workplace delinquency, surpassing the values yielded by the other HEXACO-PI scales and by the FFM variables.<sup>4</sup>

Tables 2 to 5 show the results of multiple regression analyses conducted separately for each sample. For each table, the left side shows the results of a multiple regression analysis for the HEXACO scales, and the right side shows the results for measures of the Big Five factors. Across the three samples to which the workplace delinquency measure was administered (Tables 2, 3, 4), the six HEXACO-PI scales produced much higher multiple correlations with the dependent variable than did measures of the Big Five factors (.56 vs. .46 for the Australian sample, .63 vs. .47 for the Canadian sample A, .52 vs. .41 for the Dutch sample).

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<sup>4</sup>The correlation between Honesty–Humility and workplace delinquency observed in the Netherlands ( $r = -.34$ ) was not as large as the correlations obtained in Australian and Canadian samples ( $r = -.51$  and  $-.55$ , respectively). This result is likely a reflection of the smaller variation in delinquency scores, and hence their lower reliability, within the Dutch sample, which showed a lower level of workplace delinquency than did the Canadian or Australian samples.

TABLE 2  
Multiple Regression Analyses with Workplace Delinquency Regressed on the  
HEXACO-PI Scales and the IPIP Big Five scales (Australian Sample)

<i>Predictors</i>	<i>Workplace Delinquency</i>		<i>Predictors</i>	<i>Workplace Delinquency</i>	
	$\beta$	<i>Semipartial <math>r^2</math></i>		$\beta$	<i>Semipartial <math>r^2</math></i>
HEXACO scales			IPIP-Big Five scales		
Extraversion	.11	.01	Extraversion	.16	.02
Agreeableness	-.16	.02	Agreeableness	-.43**	.13
Conscientiousness	.04	.00	Conscientiousness	-.16	.02
Emotionality	-.22*	.04	Emotional Stability	-.11	.01
Openness to Experience	-.08	.00	Intellect	.23*	.04
Honesty-Humility	-.45**	.13			
	R = .56			R = .46	

Note.  $N = 106$ . IPIP = International Personality Item Pool.

\* $p < .05$ . \*\* $p < .01$ .

TABLE 3  
Multiple Regression Analyses with Workplace Delinquency Regressed on the  
HEXACO-PI Scales and the NEO-FFI Scales (Canadian Sample A)

<i>Predictors</i>	<i>Workplace Delinquency</i>		<i>Predictors</i>	<i>Workplace Delinquency</i>	
	$\beta$	<i>Semipartial <math>r^2</math></i>		$\beta$	<i>Semipartial <math>r^2</math></i>
HEXACO scales			NEO-FFI scales		
Extraversion	.04	.00	Extraversion	.15	.02
Agreeableness	-.02	.00	Agreeableness	-.21**	.04
Conscientiousness	-.20**	.03	Conscientiousness	-.37**	.12
Emotionality	-.17**	.03	Neuroticism	-.06	.00
Openness to Experience	.05	.00	Openness to Experience	-.05	.00
Honesty-Humility	-.44**	.12			
	R = .63			R = .47	

Note.  $N = 179$ . NEO-FFI = NEO-Five Factor Inventory.

\* $p < .05$ . \*\* $p < .01$ .

To determine whether the predictive superiority of the HEXACO model over the FFM as noted previously can be attributed to the addition of the Honesty-Humility factor, we computed multiple correlations yielded by the FFM variables plus Honesty-Humility. These values were .59 (Australia), .62 (Canada A), and .51 (the Netherlands) and thus approximated the values of the multiple correlations yielded by the six HEXACO variables. These results indicate that the Honesty-Humility construct was primarily responsible for the predictive superiority associated with the HEXACO model.

TABLE 4  
Multiple Regression Analyses with Workplace Delinquency Regressed on the  
HEXACO-PI Scales and the IPIP-Big Five Scales (Dutch Sample)

<i>Predictors</i>	<i>Workplace Delinquency</i>		<i>Predictors</i>	<i>Workplace Delinquency</i>	
	$\beta$	<i>Semipartial <math>r^2</math></i>		$\beta$	<i>Semipartial <math>r^2</math></i>
HEXACO scales			IPIP-Big Five scales		
Extraversion	.03	.00	Extraversion	.16	.02
Agreeableness	-.08	.01	Agreeableness	-.11	.01
Conscientiousness	-.32**	.12	Conscientiousness	-.31**	.10
Emotionality	.00	.00	Emotional Stability	-.09	.01
Openness to Experience	.19*	.05	Intellect	.23*	.05
Honesty-Humility	-.31**	.11			
	R = .52			R = .41	

Note.  $N = 128$ . IPIP = International Personality Item Pool.

\* $p < .05$ . \*\* $p < .01$ .

TABLE 5  
Multiple Regression Analyses with the Employee Integrity Index Regressed on  
the HEXACO-PI Scales and the Big Five Inventory Scales (Canadian Sample B)

<i>Predictors</i>	<i>Employee Integrity Index</i>		<i>Predictors</i>	<i>Employee Integrity Index</i>	
	$\beta$	<i>Semipartial <math>r^2</math></i>		$\beta$	<i>Semipartial <math>r^2</math></i>
HEXACO scales			Big Five Inventory		
Extraversion	-.05	.00	Extraversion	-.14	.02
Agreeableness	.17*	.03	Agreeableness	.34**	.09
Conscientiousness	.14	.02	Conscientiousness	.25**	.02
Emotionality	.24**	.05	Emotional Stability	-.15	.02
Openness to Experience	.10	.01	Openness to Experience	-.02	.00
Honesty-Humility	.40**	.14			
	R = .61			R = .43	

Note.  $N = 164$ .

\* $p < .05$ . \*\* $p < .01$ .

A similar pattern of results was obtained when an overt integrity test, the EII, was used as the dependent variable (Table 5, Canadian Sample B). The six HEXACO-PI scales produced much higher multiple correlation (.61) than did the FFM variables (.43). When HEXACO-PI Honesty-Humility was added to the equation involving the FFM variables, the multiple correlation was increased to .58, which is similar to the value achieved by the six HEXACO-PI scales. Therefore, the higher multiple correlation yielded by the HEXACO model with respect to the EII can be attributed primarily to the inclusion of Honesty-Humility.

## Summary

Regardless of the measures used to operationalize the FFM and regardless of the countries from which the data were collected, the results of this investigation were consistent: the FFM was less able to accommodate workplace delinquency and overt integrity test scores than was the HEXACO model of personality structure. Perhaps more importantly, the degree to which the HEXACO model outperformed the FFM in predicting outcome variables was high enough to suggest that this finding has considerable practical significance. For example, on average, 14% of the total variance in the outcome variables was incrementally accounted for by Honesty–Humility when it was added to the equation involving the FFM variables.

## DISCUSSION

In this research, we reviewed the six-dimensional structural model of personality that was derived from cross-language findings obtained in lexical studies of personality structure, and we examined the predictive utility of this HEXACO model with respect to a measure of workplace delinquency and an overt integrity test. Consistent with our prediction, the HEXACO model substantially outperformed the FFM in accommodating these two criteria.

It is noteworthy that the predictive superiority of the HEXACO over the FFM was found in three different countries and with three different measures of the Big Five. These findings are consistent with those found from a previous study involving a sample of Korean employees (Lee et al., 2005). Lee et al. previously found that Honesty–Humility was a stronger predictor of workplace deviance as measured by Bennett and Robinson's (2000) measure than were any of the Big Five scales. This study, however, was conducted before the formal operationalization of the six lexical factors was developed (i.e., HEXACO-PI), and hence Honesty–Humility was operationalized by an indigenous Korean adjective marker scale. These findings extend Lee et al.'s results by showing that a similar pattern of results can be observed in Western cultures and by using different measures of Honesty–Humility as well as of workplace deviance. In the following section, we discuss some other implications of these findings.

### Overall Job Performance, Workplace Delinquency and Deviance, and the HEXACO Model

These findings call for more attention to the newly proposed six-dimensional structure of personality in investigating diverse organizational variables. Any suboptimal model of personality will provide an incomplete understanding of the role that personality variables play in predicting diverse organizational phenom-

ena. For example, although it is now widely believed that personality is important in predicting overall job performance of individual employees, the degree to which Big Five factors are related to overall job performance has been reported to be modest (Barrick & Mount, 1991).

The modest association of the FFM variables with overall job performance might be explained by the limited ability of the FFM to predict such important criterion as workplace deviance and delinquency as shown in this study and others (see Lee et al., 2005; Salgado, 2002). This idea becomes plausible if one considers the recent findings indicating the importance of workplace deviance and delinquency in determining overall job performance. For example, Rotundo and Sackett (2002) found in their policy-capturing study that workplace deviance criteria play as important a role as task-related job performance, and a more important role than organizational citizenship behavior, in determining supervisor ratings of overall job performance of an individual employee (see Dunlop & Lee, 2004, for a similar finding with respect to supervisor ratings of business unit performance). These studies suggest that the omission of any personality scale that is highly related to workplace deviance and delinquency—such as those subsumed by Honesty–Humility—may limit the ability of a personality framework to predict overall individual (or group) job performance ratings. It would be interesting to determine whether the HEXACO model can incrementally predict supervisor ratings of overall job performance beyond the level that the FFM achieves.

### Integrity Tests and the HEXACO Model

Before discussing the findings involving the overt integrity test and the HEXACO model, we should remind readers that the origins of integrity tests and of the HEXACO-PI Honesty–Humility scale are entirely independent. Most integrity tests were developed with the purely practical aim of achieving a more reliable workforce. In contrast, the HEXACO-PI Honesty–Humility scale was developed strictly in reference to the lexical Honesty–Humility factor that has been repeatedly found in many languages (see Ashton, Lee, Perugini, et al., 2004). However, despite the different origins and purposes of the variables, HEXACO-PI Honesty–Humility was found to correlate very strongly with the overt integrity measure included in this study. Our findings resolve the construct confusion regarding overt integrity tests, which has limited the scientific understanding as to why those tests show such high validity coefficients with respect to some important organizational criteria. That is, the primary component of overt integrity tests is not the task-related conscience that characterizes the Conscientiousness factor but rather the moral conscience that characterizes the Honesty–Humility factor.

We should note, however, that this finding might not be generalizable to *all* existing tests subsumed under the rubric of overt integrity tests, given that the average intercorrelation among these tests is rather low (see Sackett & Wanek, 1996; cor-

rected  $r = .45$ , observed  $r = .32$ ). Nevertheless, we believe that this finding is very likely to hold for more widely used overt integrity tests such as London House PSI (London House Press, 1975), Reid Report (Reid Psychological Systems, 1951), and Stanton Survey (Klump, 1964), which are strongly correlated with each other (see Sackett & Wanek, 1996, corrected  $r = .85$ , observed  $r = .71$ ) and whose item content is similar to that of the EII used in our study.<sup>5</sup> Consistent with this similarity of content, Lasson and Bass (1997) reported strong convergent correlations between the EII Admissions subscale (as scored in the direction of higher dollar value of admitted theft) and the Honesty Attitudes and Social Behavior scales of the Reid Report ( $r = -.60$  and  $.59$ , respectively,  $N = 202$ ).

One might also wonder whether variance in personality-based integrity tests (e.g., the Employee Reliability Index; J. Hogan & Hogan, 1989) can also be accounted for by the new HEXACO model. Although HEXACO Honesty–Humility may add some significant incremental explanation of variance in some personality-based integrity tests, it seems less likely that this new dimension will provide a predictive gain for personality-based integrity tests that is as large as the one observed here for overt integrity tests. The reason for this is that personality-based integrity tests assess many different aspects of personality, including even temper, self-control, and general dependability and reliability, in addition to traits that are directly related to Honesty–Humility. Therefore, the main elements of Honesty–Humility seem to be substantially diluted in personality-based integrity tests, which assess a wide array of socially desirable characteristics. The previous discussion implies that the key constructs underlying the two different types of integrity tests should be different. This is in fact very likely to be the case. Ones (1993, as cited in Sackett & Wanek, 1996) reported a meta-analytic correlation of .39 (before correction, .25) between personality-based and overt integrity tests. In addition, Murphy and Lee (1994b) found that a personality-based integrity test (PDI Employment Inventory) was accommodated nicely within the Hogan Personality Inventory (R. Hogan & Hogan, 1995), whereas an overt integrity test (London House PSI) was not. Taken together, these results indicate that these two different types of integrity tests should be examined separately in scientific research, despite the fact that the two test types may have a great deal in common in terms of their usage and purposes.

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<sup>5</sup>The conceptual linkage between the EII and these overt integrity tests can be established further by comparing the item content of the EII with that of other overt integrity tests. Recently, Wanek, Sackett, and Ones (2003) sorted every item of eight integrity tests into 23 distinct thematic categories. When two of us independently sorted the 63 items of the EII into these 23 thematic categories, 61 or 62 items (depending on the sorter) could be reliably sorted into 7 categories (theft thoughts/temptations, theft admissions, association with delinquents, honesty attitudes, perception of dishonesty norms, supervision attitudes, and punitiveness). According to Wanek et al.'s classification, these 7 thematic categories accounted for 71% of the Stanton Survey items, 66% of the Reid Report items, and 38% of London House PSI items.



## Limitations of Our Research

An alternative interpretation of the strong correlations between Honesty–Humility and the criterion variables of this study is that these relations merely reflect shared method variance due to self-report. We should note, however, that self-reports of the variables included in our research have been known to be highly saturated with true substantive variance. For example, self-reported delinquency correlates significantly with other reported delinquency (Gold, 1966) and with objective criteria of delinquency that are measured concurrently (e.g., Babinski, Hartsough, & Lambert, 2001) and even predictively (e.g., Jolliffe et al., 2003). Similarly, a significant convergent correlation between self- and peer reports of Honesty–Humility has been observed (Lee, Gizzarone, & Ashton, 2003). Taken together, these results indicate that it is unlikely that the correlations between Honesty–Humility and workplace delinquency, as found in our investigation, can be explained primarily in terms of common method variance. Nevertheless, an important aim for future research should be to investigate these variables using multiple sources of data, such as aggregated peer reports, to determine more precisely the extent of the substantive relations between the variables.

Another potential limitation of this study might be that student samples were used rather than samples of older, nonstudent employees. However, the students in this study had some employment history, mostly as full-time summer employees and as part-time employees. In addition, the focus of this study was to identify personality *correlates* of workplace delinquency (i.e., relations) rather than to examine the prevalence of such behavior (i.e., mean levels). Thus, given the focus on the covariation among the variables, the use of a somewhat atypical segment of the workforce is less likely to be a significant concern for this study. We acknowledge, however, that it would be useful to verify the generalizability of these findings using other forms of organizational deviance and delinquency (e.g., embezzlement, padding of expense accounts) that we could not examine due to the nature of our participant samples.

An important issue not considered in this article is that of the predictive validity of broad factors versus that of the narrow facets that constitute those factors. As has been repeatedly demonstrated (e.g., Ashton, 1998; Paunonen & Ashton, 2001), many criterion variables are better predicted by theoretically relevant narrow facets than by the broader factors to which those narrow facets belong. In the case of variables such as workplace delinquency and integrity, it is likely that certain aspects of the Honesty–Humility factor—particularly those dealing directly with the reluctance to cheat or to steal—will be especially predictive and may well outperform the Honesty–Humility factor as a whole. Future research should establish the extent to which the various facets of Honesty–Humility relate to criteria such as workplace delinquency and integrity.

## CONCLUSION

The advent of the FFM has greatly contributed to the advancement of our knowledge regarding organizational behavior and personality. The scientific knowledge regarding the effect of personality on diverse organizational behaviors has accumulated rapidly using the FFM. However, because the FFM partially omits one of the major dimensions of personality, as we have recently demonstrated, this omission may limit our understanding of the relationships between personality and a variety of important organizational criteria. This research has shown that the addition of the Honesty–Humility factor corrects this omission and provides a substantial improvement in the prediction of workplace delinquency and in the explication of the overt integrity test construct.

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## REFERENCES

- Alliger, G. M., Lilienfeld, S. O., & Mitchell, K. E. (1996). The susceptibility of overt and covert integrity tests to coaching and faking. *Psychological Science, 7*, 32–39.
- Ashton, M. C. (1998). Personality and job performance: The importance of narrow traits. *Journal of Organizational Behavior, 19*, 289–303.
- Ashton, M. C., & Lee, K. (2001). A theoretical basis for the major dimensions of personality. *European Journal of Personality, 15*, 327–353.
- Ashton, M. C., & Lee, K. (2002). Six independent factors of personality variation: A response to Saucier. *European Journal of Personality, 16*, 63–75.
- Ashton, M. C., Lee, K., & Goldberg, L. R. (2004). A hierarchical analysis of 1,710 English personality-descriptive adjectives. *Journal of Personality and Social Psychology, 87*, 707–721.
- Ashton, M. C., Lee, K., Perugini, M., Szarota, P., De Vries, R. E., Di Blas, L., et al. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology, 86*, 356–366.
- Ashton, M. C., Lee, K., & Son, C. (2000). Honesty as the sixth factor of personality: Correlations with Machiavellianism, psychopathy, and social adroitness. *European Journal of Personality, 14*, 359–368.
- Babinski, L. M., Hartsough, C. S., & Lambert, N. M. (2001). A comparison of self-report of criminal involvement and official arrest records. *Aggressive Behavior, 27*, 44–54.

- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, 44, 1–26.
- Bennett, R. J., & Robinson, S. L. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology*, 85, 349–360.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, 117, 187–215.
- Christie, R., & Geis, F. L. (1970). *Studies in Machiavellianism*. New York: Academic.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *NEO Personality Inventory–Revised (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Dunlop, P. D., & Lee, K. (2004). Workplace deviance, organizational citizenship behavior and business unit performance: The bad apples do spoil the whole barrel. *Journal of Organizational Behavior*, 24, 1–14.
- Gold, M. (1966). Undetected delinquent behavior. *Journal of Research in Crime and Delinquency*, 3, 27–46.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48, 26–34.
- Goldberg, L. R. (1999). A broad-bandwidth, public-domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe* (Vol. 7, pp. 7–28). Tilburg, The Netherlands: Tilburg University Press.
- Harpur, T. J., Hare, R. D., & Hakstian, A. R. (1989). Two-factor conceptualization of psychopathy: Construct validity and assessment implications. *Psychological Assessment*, 1, 6–17.
- Hogan, J., & Hogan, R. (1989). How to measure employee reliability. *Journal of Applied Psychology*, 74, 273–279.
- Hogan, R. (1986). *Hogan Personality Inventory manual*. Minneapolis, MN: National Computer Systems.
- Hogan, R., & Hogan, J. (1995). *Hogan Personality Inventory manual* (2nd ed.). Tulsa, OK: Hogan Assessment Systems.
- Hough, L. M., Eaton, N. K., Dunnette, M. D., Kamp, J. D., & McCloy, R. A. (1990). Criterion-related validities of personality constructs and the effect of response distortion on those validities. *Journal of Applied Psychology*, 75, 581–595.
- Hrebickova, M. (1995). *The structural model of personality based on the lexical analysis: A Czech replication study of the five-factor model based on a comprehensive taxonomy of personality-descriptive adjectives*. Unpublished manuscript, Institute of Psychology, Academy of Sciences of the Czech Republic, Brno.
- Jackson, D. N. (1994). *Jackson Personality Inventory—Revised manual*. Port Huron, MI: Sigma Assessment Systems.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The “Big Five” Inventory—versions 4a and 54*. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York: Guilford.
- Jolliffe, D., Farrington, D. P., Hawkins, D., Catalano, R. F., Hill, K. G., & Kosterman, R. (2003). Predictive, concurrent and prospective and retrospective validity of self-reported delinquency. *Criminal Behavior and Mental Health*, 13, 179–197.
- Judge, T. A., Bono, J. R., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87, 765–780.
- Klump, C. S. (1964). *Stanton Survey*. Charlotte, NC: Stanton Corporation.

- Lasson, E. D., & Bass, A. (1997). Integrity testing and deviance: Construct validity issues and the role of situational factors. *Journal of Business and Psychology*, 12, 121–146.
- Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO Personality Inventory. *Multivariate Behavioral Research*, 39, 329–358.
- Lee, K., Ashton, M. C., & Shin, K. H. (2005). Personality correlates of workplace anti-social behavior. *Applied Psychology: An International Review*, 54, 81–98.
- Lee, K., Gizzarone, M., & Ashton, M. C. (2003). Personality and the Likelihood to Sexually Harass. *Sex Roles*, 49, 59–69.
- Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology*, 68, 151–158.
- London House Press. (1975). *Personnel Selection Inventory manual*. Park Ridge, IL: Author.
- Lousig-Nont, G. M. (1989). *Phase II Profile: Integrity Status Inventory for Prospective Employees*. Las Vegas, NV: Lousig-Nont & Associates, Inc.
- McCrae, R. R. (1989). Why I advocate the Five-Factor Model: Joint analyses of the NEO-PI and other instruments. In D. M. Buss & N. Cantor (Eds.), *Personality psychology: Recent trends and emerging directions*. New York: Springer-Verlag.
- Murphy, K. R., & Lee, S. L. (1994a). Does conscientiousness explain the relationship between integrity and job performance? *International Journal of Selection and Assessment*, 2, 226–233.
- Murphy, K. R., & Lee S. L. (1994b). Personality variables related to integrity test scores: The role of conscientiousness. *Journal of Business and Psychology*, 8, 413–424.
- Nicol, A. A. M., & Paunonen, S. V. (2002a). Overt honesty measures predicting admissions: An index of validity or reliability. *Psychological Reports*, 90, 105–115.
- Nicol, A. A. M., & Paunonen, S. V. (2002b). Validity evidence for the different item styles of overt honesty measures. *Journal of Business and Psychology*, 16, 431–445.
- Ones, D. S. (1993). *The construct validity of integrity tests*. Unpublished doctoral dissertation, University of Iowa, Iowa City, Iowa.
- Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. *Journal of Applied Psychology*, 78, 679–703.
- Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36, 556–563.
- Paunonen, S. V., & Ashton, M. C. (2001). Big Five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology*, 81, 524–539.
- Reid Psychological Systems. (1951). *Reid Report*. Chicago: Author.
- Rotundo, M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology*, 87, 66–80.
- Ryan, A. M., & Sackett, P. R. (1987). Pre-employment honesty testing: Fakability, reactions of test taker, and company image. *Journal of Business and Psychology*, 1, 248–256.
- Sackett, P. R., & Wanek, J. E. (1996). New developments in the use of measures of honesty, integrity, conscientiousness, dependability, trustworthiness, and reliability for personnel selection. *Personnel Psychology*, 49, 787–829.
- Salgado, J. F. (2002). The Big Five personality dimensions and counterproductive behavior. *International Journal of Selection of Assessment*, 10, 117–125.
- Tellegen, A. (1993). Folk concepts and psychological concepts of personality and personality disorder. *Psychological Inquiry*, 4, 122–130.
- Wanek, J. E., Sackett, P. R., & Ones, D. (2003). Towards an understanding of integrity test similarities and differences: An item-level analysis of seven tests. *Personnel Psychology*, 56, 873–894.

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